

CLAIMS

1. A method of producing Lenticular images, comprising the steps of:
providing photosensitive material;
providing a Lenticular sheet in contact with said photosensitive material;
and
exposing said photosensitive material through said Lenticular sheet, wherein said step of exposing comprises using an optical imaging system to expose said photosensitive material through an additional lens-array comprising lenses having power only in one direction.
2. The method of claim 1, wherein the lenses of said additional lens-array are cylindrical.
3. The method of claim 1, wherein the lenses of said additional lens-array are semi-cylindrical.
4. The method of claim 1, wherein the lenses of said additional lens-array have non-zero aspherical coefficients in the sag determining equation.
5. The method of claim 1, wherein the optical imaging system has focal planes different in directions perpendicular and parallel to the Lenticular sheet lenses.
6. The method of claim 5, wherein the optical imaging system produces an image coinciding with the plane of the photosensitive material in the direction along the Lenticular sheet lenses and an intermediate image within, on, or above the additional lens array in the direction perpendicular to the Lenticular sheet lenses.
7. The method of claim 6, wherein the focal plane of the optical imaging system in the direction perpendicular to the Lenticular sheet lenses is conjugate to the plane of the photosensitive material relative to each pair of Lenticular sheet lens and additional lens.
8. The method of claim 6, wherein the focal plane of the additional lens array coincides with the intermediate image.
9. The method of claim 1, wherein the pitch of the additional lens array is substantially the same as the pitch of the Lenticular sheet lenses.
10. The method of claim 1, wherein only part of the physical aperture of the additional lens array is used for reducing optical crosstalk.

11. Apparatus for producing Lenticular images, comprising:
 - means for holding photosensitive material in contact with a Lenticular sheet;
 - an optical imaging system; and
 - an additional lens-array mounted between said means for holding and said optical imaging system, said additional lens array comprising lenses having power only in one direction.
12. The apparatus of claim 11, wherein said means for holding comprise a flatbed.
13. The apparatus of claim 11, wherein said means for holding comprise a drum.
14. The apparatus of either claims 12 and 13, wherein said optical imaging system comprises a Spatial Light Modulator (SLM).
15. The apparatus of either claims 12 and 13, wherein said optical imaging system comprises a laser scanning device.
16. The apparatus of claim 11, wherein the lenses of said additional lens array are cylindrical.
17. The apparatus of claim 11, wherein the lenses of said additional lens array are semi-cylindrical.
18. The apparatus of claim 11, wherein the lenses of said additional lens array have non-zero aspherical coefficients in the sag determining equation.
19. The apparatus of claim 11, wherein the optical imaging system has focal planes different in directions perpendicular and parallel to the Lenticular sheet lenses.
20. The apparatus of claim 19, wherein the optical imaging system produces an image coinciding with the plane of the photosensitive material in the direction along the Lenticular sheet lenses and an intermediate image within, on, or above the additional lens array in the direction perpendicular to the Lenticular sheet lenses.
21. The apparatus of claim 20, wherein the focal plane of the optical imaging system in the direction perpendicular to the Lenticular sheet lenses is conjugate to the plane of the photosensitive material relative to the each pair of Lenticular sheet lens and additional lens.
22. The apparatus of claim 20, wherein the focal plane of the additional lens array coincides with the intermediate image.

23. The apparatus of claim 11, wherein the pitch of the additional lens array is the same or close to the pitch of the Lenticular lenses.
24. The apparatus of claim 11, wherein only part of the physical aperture of the additional lens array is used for reducing optical crosstalk.